

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

AMENDMENTS TO THE CLAIMS:

The following listing of claims supersedes all prior versions and listings of claims in this application:

1. (Currently Amended) A method of dividing a task amongst a plurality of nodes within a distributed computer, said method comprising:

operating each of said plurality of nodes to

~~receiving~~ receive immediate neighbour requirements data indicating desired properties of immediate neighbour nodes in a task-suited logical network of nodes and interconnections between them, which properties lead to said task-suited logical network being suited to said task or tasks of a similar type, said requirements data including distinctive immediate neighbour requirements data indicating desired immediate neighbour properties which differ from immediate neighbour properties for one or more other nodes;

~~receiving~~ receive node capability data ~~for nodes~~ from an applicant node available to join said task-suited logical network;

~~calculating a task-suited logical network topology~~ determine whether to allow said applicant node to become an immediate neighbour in dependence upon said distinctive immediate neighbour requirements data and said node capability data; and

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

~~distributing~~ distribute said task amongst the plurality of nodes in accordance with the task-suited logical network topology thus calculated.

2. (Cancelled)

3. (Previously Presented) A method according to claim 1 wherein said immediate neighbour requirements data comprises one or more property value pairs.

4. (Previously Presented) A method according to claim 3 wherein said immediate neighbour requirements data is arranged in accordance with a predefined data structure defined by requirements format data stored in said computer, said method further comprising the step of verifying that said immediate neighbour requirements data is formatted in accordance with predefined data structure by comparing said immediate neighbour requirements data to said requirements format data.

5. (Previously Presented) A method according to claim 1 wherein said node capability data comprises one or more property value pairs.

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

6. (Previously Presented) A method according to claim 5 wherein said node capability data is arranged in accordance with a predefined data structure defined by node capability format data stored in said computer, said method further comprising that said node capability data is formatted in accordance with predefined data structure by comparing said node capability data to said node capability format data.

7. (Previously Presented) A method according to claim 1 further comprising the step of operating a node seeking to join said task-suited logical network to generate node capability data and send said data to one or more nodes already included within said task-suited logical network.

8. (Previously Presented) A method according to claim 1 wherein said task distribution involves a node forwarding a task to a node which neighbours it in said task-suited logical network topology.

9. (Previously Presented) A method according to claim 1 wherein said immediate neighbour requirements data comprises data relating to the amount of data storage or processing power available at said node.

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

10. (Previously Presented) A method according to claim 1 wherein said immediate neighbour requirements data comprises data relating to the quality of communication between said node and one or more nodes already selected for said task-suited logical network.

11. (Currently Amended) Distributed computer apparatus comprising:
a plurality of data processor nodes, each connected to at least one other of said data processor nodes via a communications link;

each of said nodes having recorded therein:

a) task-suited logical network membership policy data, said logical network membership policy data including distinctive immediate neighbour requirements data indicating desired immediate neighbour properties which differ from immediate neighbour properties for one or more other nodes;

b) graph data representing a task-suited logical network comprising a plurality of nodes and the links between them; and

c) processor readable code executable to update said graph data, said code comprising:

task-suited logical network membership request generation code executable to generate and send a task-suited logical network membership request including node

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

profile data to another node indicated to be a member of said task-suited logical network;

task-suited logical network membership request handling code executable to receive a task-suited logical network connection request including node profile data, and decide whether said request is to be granted in dependence upon the task-suited logical network ~~membership policy~~ distinctive immediate neighbour requirements data stored at said node; and

task-suited logical network membership update code executable to update the graph data stored at said node on deciding to grant a task-suited logical network connection request received from another node, and to send a response to the node sending said request indicating that said request is successful.

12. (Original) Distributed computer apparatus according to claim 11, wherein each node further has recorded therein node profile data generation code executable to generate said node profile data.

13. (Previously Presented) Distributed computer apparatus according to claim 11 or claim 12, wherein each node further has recorded therein task-suited logical network policy data distribution code executable to distribute said policy data, said policy distribution code comprising:

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

policy input code operable to receive policy data;
policy storage code operable to store said received policy data at said node; and
policy forwarding code operable forward said policy from said node to at least
one other node in said distributed computer apparatus.

14. (Previously Presented) Distributed computer apparatus according to claim 11, wherein each node further has recorded therein policy format data; and
policy data format verification code executable to check that said received policy data accords with said policy format data.

15. (Previously Presented) Distributed computer apparatus according to claim 11, wherein each node further has recorded therein profile format data; and
profile data format verification code executable to check that said received node profile data accords with said profile format data.

16. (Previously Presented) Distributed computer apparatus according to claim 11, wherein each node further has recorded therein received program data execution code executable to receive program data from another of said nodes and to execute said program.

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

17. (Original) Distributed computer apparatus according to claim 16, wherein said plurality of processor nodes comprise computers executing different operating systems programs, and said received program execution code is further executable to provide a similar execution environment on nodes despite the differences in said operating system programs.

18. (Currently Amended) A method of operating a member node of a distributed computing network, said method comprising:

accessing task-suited logical network connection policy data including distinctive immediate neighbour requirements data comprising one or more property value pairs indicating one or more criteria for becoming an immediate neighbour of said member node in a task-suited logical network built on said distributed computing network;

receiving, from an applicant node, profile data comprising one or more property value pairs indicating characteristics of the applicant node;

determining whether said applicant profile data indicates that said applicant node meets said connection criteria for becoming an immediate neighbour of said node in said task-suited logical network; and

responsive to said determination indicating that said applicant node meets said connection criteria, updating task-suited logical network membership data accessible to

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

said node to indicate that said applicant node is an immediate ~~neighbor~~ neighbour of said member in said task-suited logical network.

19. (Previously Presented) A method according to claim 18 wherein said member node stores graph data representing a task-suited logical network comprising a plurality of nodes and the links between them.

20. (Previously Presented) A method according to claim 19 wherein said member node stores said task-suited logical network connection policy data.

21. (Currently Amended) A method according to claim 20 further comprising the steps of:

updating said task-suited logical network connection policy data;

removing indications that one or more nodes are members of said task-suited logical network from said graph data; and

sending an indication to said one or more nodes requesting them to re-send said profile data.

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

22. (Currently Amended) A computer readable storage medium containing a computer program product loadable into the internal memory of a digital computer including an executable program code comprising:

task-suited logical network immediate neighbour requirements data reception code executable to receive and store received task-suited logical network immediate neighbour requirements data;

node capability profile data reception code executable to receive and store received node capability profile data, said requirements data including distinctive immediate neighbour requirements data indicating desired immediate neighbour properties which differ from immediate neighbour properties for one or more other nodes;

comparison code executable to compare said node capability data and said ~~task-suited logical network~~ distinctive immediate neighbour requirements data to find whether the node represented by said node capability data meets said ~~task-suited logical network~~ distinctive immediate neighbour requirements data;

task-suited logical network topology update code executable to add an identifier of said represented node to a task-suited logical network topology data structure on said comparison code indicating that said represented node meets said requirements; and

task execution code executable to receive code from another node in said task-suited logical network and to execute said code or forward said code to a node

Paul Francis McKEE
Serial No. 10/517,434
May 10, 2010

represented as an immediate neighbour in said task-suited logical network topology data structure.

23. (Currently Amended) A method of operating a network to create a logical network topology based on the physical topology of said network, said logical network topology being suited to a task, said method comprising:

identifying a member node as a member of said task-suited logical network;

storing immediate neighbour requirements data including distinctive immediate neighbour requirements data representing what is required of nodes in order for them to be a suitable immediate neighbour of said member node in said task-suited logical network;

storing candidate neighbour node capability data representing the capabilities of a candidate neighbour node in said physical network;

operating said network to compare said candidate neighbour node capability data with said distinctive immediate neighbour requirements data of the node of which the candidate neighbour node seeks to be an immediate neighbour; and

responsive to said comparison indicating that said candidate neighbour node meets said requirements, making said node an immediate neighbour in said logical network.